CLAIMS:

1. A method of motion-compensated interpolation of a data-signal, which data-signal comprises successive images wherein each image comprises groups of pixels, the method comprising:

generating (18) motion vectors, each motion vector corresponding to a group of pixels of one image, between a group of pixels of said one image and a second group of pixels of another image in the data-signal;

generating (16) interpolated results as a function of these motion vectors;

estimating (20) the reliability of each motion vector corresponding to a particular group of pixels;

calculating (20) weights as a function of the reliability of the motion vectors; and

generating (20) an interpolated luminous intensity of a group of pixels for an interpolated image by calculating, on the basis of these weights, a weighted average of the interpolated results.

2. A method according to claim 1, wherein the interpolated luminous intensity of a group of pixels is calculated according to:

$$I^{k+\Delta}(\vec{x}) = (\Sigma_{m=1,..,M}\{w^{k}_{m}(\vec{x}) * i^{k+\Delta}_{m}(\vec{x})\}) / \Sigma_{m=1,..,M}\{w^{k}_{m}(\vec{x})\}, \qquad \textbf{(A)}$$

wherein $I^{k+\Delta}(\vec{x})$ is the interpolated luminous intensity of the group of pixels of an interpolated image $F^{k+\Delta}$, wherein the location of the group of pixels in the image is defined by the integer two-dimensional vector $\vec{x}$ and where the real value Δ defines the place of the interpolated image $F^{k+\Delta}$ in the image sequence F^{n}, $n=1,2,\ldots,k,k+1,\ldots,N$, wherein $\Sigma_{m=1,..,M}\{.\}$ is a summation from 1 to M over its argument $\{.\}$ and where $w^{k}_{m}(\vec{x})$ is a weight corresponding to the m^{th} interpolation result $i^{k+\Delta}_{m}(\vec{x})$:

$$i^{k+\Delta}_{m}(\vec{x}) = median\{\, (I^{k}(round\{\vec{x} - \Delta * \vec{D}^{k}_{m}(\vec{x})\})\,), \\ (I^{k}(\vec{x}) + I^{k+1}(\vec{x}))/2)\ , \qquad \textbf{(B)}$$

$$(I^{k+1}(round\{\vec{x} + (1-\Delta) * \vec{D}^k_m(\vec{x})\})),$$

wherein *median{.}* is a function which gives the median value of its input arguments and *round{.}* is a function which gives the nearest integer value to each component of its input argument, and wherein $I^k(\vec{x})$ is a luminous intensity of the group of pixels at location $\vec{x}$ of the image F^k and wherein $\vec{D}^k_m(\vec{x})$ is the m^{th} two-dimensional integer motion vector, which is normalised between two successive images, of the M motion vectors which correspond to the group of pixels at location $\vec{x}$ and wherein the weight $w^k{}_m(\vec{x})$ is a function of the reliability of the motion vector $\vec{D}^k_m(\vec{x})$.

3. A method according to claim 2, wherein the reliability of the motion vector $\vec{D}^k_m(\vec{x})$ is a function of the difference between the luminous intensities $I^k(\vec{x})$ and $I^{k+1}(\vec{x} + \vec{D}^k_m(\vec{x}))$ and wherein the reliability is also a function of the relative frequency of occurrence of $\vec{D}^k_m(\vec{x})$ in the neighborhood of the location $\vec{x}$ in the image F^k.

4. A method according to claim 1, wherein the generation of interpolated luminous intensities according to the invention is only performed in those parts of the images of the data-signal where edges in the motion vector field of the images are located.

5. A method according to claim 4, wherein the method comprises a step of edge detection, wherein an edge in the motion vector field of image F^k is detected if at least one of the inequalities **(C1)** and **(C2)** is satisfied:

$$\|[\vec{D}^k_q(\vec{x} - \vec{K})]_1 - [\vec{D}^k_q(\vec{x} + \vec{K})]_1\| > T, \quad \textbf{(C1)}$$

$$\|[\vec{D}^k_q(\vec{x} - \vec{K})]_2 - [\vec{D}^k_q(\vec{x} + \vec{K})]_2\| > T, \quad \textbf{(C2)}$$

where q is a pre-determined integer value and wherein $\|.\|$ is a function which yields the absolute value of its input argument, $[.]_p$ is a function which yields the p^{th} component of its vector input argument, where T is a pre-determined fixed real value threshold and wherein $\vec{K}$ is a vector which is given with:

$$\vec{K} = (K_1; K_2)^T, \quad \text{(D)}$$

where K_1 and K_1 are integer values.

6. A device for motion-compensated interpolation of a data-signal, which data-signal comprises successive images wherein each image comprises groups of pixels, the device comprising:

means (18) for generating motion vectors, each motion vector corresponding to a group of pixels of one image, between a group of pixels of said one image and a second group of pixels of another image in the data-signal;

means (16) for generating interpolated results as a function of these motion vectors;

means (20) for estimating the reliability of each motion vector corresponding to a particular group of pixels;

means (20) for calculating weights as a function of the reliability of the motion vectors; and

means (20) for generating interpolated luminous intensities of groups of pixels by calculating, on the basis of these weights, weighted averages of the interpolated results.

7. A picture signal display apparatus, comprising:

means (12) for receiving a data-signal, which data-signal comprises successive images wherein each image comprises groups of pixels;

a device (10) for motion-compensated interpolation of said data-signal, as claimed in claim 6;

means for generating at least one interpolated image on the basis of said interpolated luminous intensities; and

means (D) for displaying the at least one interpolated image.